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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,431	12/26/2000	Benjamin Thomas Smith	GOOGLE-7 (GP-015-91-US)	4462
7590	12/19/2003		EXAMINER	MAHMOUDI, HASSAN
Straub & Pokotylo Suite 83, Bldg. 6 1 Bethany Road Hazlet, NJ 07730			ART UNIT	PAPER NUMBER
			2175	
DATE MAILED: 12/19/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/748,431	SMITH ET AL.
	Examiner Tony Mahmoudi	Art Unit 2175

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1)  Responsive to communication(s) filed on \_\_\_\_\_.
- 2a)  This action is FINAL.                                    2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4)  Claim(s) 1-32 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-32 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.
 

If approved, corrected drawings are required in reply to this Office action.
- 12)  The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All b)  Some \* c)  None of:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a)  The translation of the foreign language provisional application has been received.
- 15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121. *DOV POPOVICI*

#### Attachment(s)

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.

- 4)  Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The arrangement of the disclosed application does not conform with 37 CFR 1.77(b).

Section heading are underlined throughout the disclosed specification. Section headings should not be underlined and/or **boldfaced**. Appropriate corrections are required according to the guidelines provided below:

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cappi (U.S. Pub. No. 2002/0038308) in view of Gilai et al (U.S. Patent No. 6,256,630.)

As to claim 1, Cappi teaches a method of providing search results (see Abstract) in response to an ambiguous search query (see paragraph 48), the ambiguous search query consisting of a sequence of ambiguous information components (see paragraph 37): receiving information from a user (see Abstract, and see paragraph 9); obtaining mapping information that maps the ambiguous information components (see paragraphs 37, 46, and 51) to less ambiguous information components (see paragraphs 57 and 62);

using the mapping information to translate the sequence of ambiguous information components into one or more corresponding sequences of less ambiguous information components (see paragraphs 62, 64, and 69);

providing one or more of the sequences of less ambiguous information as an input to a search engine (see paragraphs 48, 111, and 141, and see figure 12);

obtaining search results from the search engine (see paragraph 140, where “obtaining search results” is read on “assembling the results”); and

presenting the search results to the user (see paragraph 147.)

Cappi does not teach: receiving a sequence of ambiguous information components from a user.

Gilai et al teaches a word containing database accessing system and method (see Abstract), in which he teaches receiving a sequence of ambiguous information components from a user (see Abstract, and see column 3, line 1 through column 4, line 21.)

Therefore, it would have been obvious to a use having ordinary skill in the art at the time the invention was made to have modified Cappi to include receiving a sequence of ambiguous information components from a user.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cappi by the teaching of Gilai et al, because receiving a sequence of ambiguous information components from a user, would enable the user to enter ad-hoc and ambiguous, and possibly erroneous data (words, numbers, and phrases), without worrying about the correct spelling or the relations between the entered words and have the

system display best matching results based on the entered information, as taught by Gilai et al (see column 4, lines 22-33.)

As to claims 2, 17, 22, and 28, Cappi as modified teaches wherein the mapping information is based on the configuration of a standard telephone keypad (see Gilai et al, figures 9 and 13, and see column 6, lines 52-60, and column 10, lines 17-31.)

As to claim 3, Cappi as modified teaches wherein the ambiguous information components comprise numbers and the less ambiguous information components comprise letters (see Gilai et al, column 10, lines 3-31, and see figure 13. Since each number can represent up to three letters, it is obvious that numbers represent more ambiguous entries than letters.)

As to claim 4, Cappi as modified teaches wherein each of the ambiguous information components comprises a single press of a key and the less ambiguous information comprises letters that correspond to the key (see Gilai et al, column 17, line 49 through column 18, line 9.)

As to claim 5, Cappi as modified teaches wherein the ambiguous information components comprise phonemes (see Gilai et al, column 6, lines 4-14, and see column 18, lines 53-65.)

As to claim 6, Cappi as modified teaches wherein the less ambiguous information components comprise alphanumeric information (see Gilai et al, column 19, line 31 through column 20, line 17.)

As to claim 7, Cappi as modified teaches wherein the ambiguous information components comprise visual information (see Cappi, paragraph 35.)

As to claim 8, Cappi as modified teaches wherein the act of using comprises using the mapping information in combination with a lexicon to translate the sequence of ambiguous information components into one or more corresponding sequences of less ambiguous information components (see Cappi, Abstract, and see paragraphs 37 and 46, where “lexicon” is read on “dictionary”.)

As to claim 9, Cappi as modified teaches wherein the lexicon is a dictionary (see Cappi, paragraphs 37 and 46.)

As to claim 10, Cappi as modified teaches wherein the lexicon is a list of sequences of less ambiguous information components that previously have been processed by the search engine (see Cappi, paragraph 63.)

As to claims 11, 20, 23 25, and 27, Cappi as modified teaches wherein the act of providing comprises providing at least two sequences of less ambiguous information

components to the search engine using a logical "OR" operation (see Cappi, paragraph 34, where "logical integration" is taught.)

As to claim 12, Cappi as modified teaches wherein the act of providing comprises: determining a subset of the translated sequences of less ambiguous information components (see Cappi, paragraphs 62, 64, and 69); and providing the subset of translated sequences of less ambiguous information components as an input to a search engine (see Cappi, paragraphs 48, 111, and 141, and see figure 12.)

As to claim 13, Cappi as modified teaches wherein the act of determining comprises comparing the translated sequences of less ambiguous information components against a lexicon (see Cappi, paragraph 59.)

As to claim 14, Cappi as modified teaches wherein the act of determining comprises comparing the translated sequences of less ambiguous information components against a search query log (see Gilai et al, column 20, lines 64-67.)

As to claim 15, Cappi as modified teaches wherein the act of determining comprises using statistical information about the co-occurrence of the less ambiguous information components within the sequence (see Gilai et al, column 22, lines 39-44.)

As to claim 16, Cappi teaches a method of providing search results (see Abstract) in response to an ambiguous search query (see paragraph 48), comprising:

- receiving information from a user (see Abstract, and see paragraph 9);
- obtaining mapping information that maps the information components (see paragraphs 37, 46, and 51) to other information components corresponding to the same key press (see paragraphs 57 and 62);
- using the mapping information to determine other sequences of information components (see paragraphs 62, 64, and 69);
- providing one or more of the received sequence and the other sequences as an input to a search engine (see paragraphs 48, 111, and 141, and see figure 12);
- obtaining search results from the search engine (see paragraph 140, where “obtaining search results” is read on “assembling the results”); and
- presenting the search results to the user (see paragraph 147.)

Cappi does not teach: receiving a sequence of ambiguous information components from a user, each information component corresponding to a key press.

Gilai et al teaches a word containing database accessing system and method (see Abstract), in which he teaches receiving a sequence of ambiguous information components from a user (see Abstract, and see column 3, line 1 through column 4, line 21), each information component corresponding to a key press (see column 12, lines 50-55, and see column 17, line 65 through column 18, line 6.)

Therefore, it would have been obvious to a use having ordinary skill in the art at the time the invention was made to have modified Cappi to include receiving a sequence of

ambiguous information components from a user, each information component corresponding to a key press.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cappi by the teaching of Gilai et al, because receiving a sequence of ambiguous information components from a user, each information component corresponding to a key press, would enable the user to enter ad-hoc and ambiguous, and possibly erroneous data (words, numbers, and phrases), without worrying about the correct spelling or the relations between the entered words and have the system display best matching results based on the entered information, as taught by Gilai et al (see column 4, lines 22-33.)

As to claim 18, Cappi as modified teaches wherein the received information components comprise numbers and the other information components comprise letters (see Gilai et al, column 10, lines 3-31, and see figure 13.)

As to claim 19, Cappi as modified teaches wherein both the received and other information components comprise letters (see Gilai et al, column 17, lines 59-65.)

As to claim 21, Cappi teaches a method of providing search results (see Abstract) in response to an ambiguous search query (see paragraph 48), comprising:  
providing at least one of the letter strings as a search query to a search engine (see paragraphs 48, 111, and 141, and see figure 12);

obtaining search results from the search engine in response to the search query (see paragraph 140, where “obtaining search results” is read on “assembling the results”); and presenting the search results to the user (see paragraph 147.)

Cappi does not teach: receiving a string of numbers; and translating the string of numbers into a plurality of letter strings based on mapping information.

Gilai et al teaches a word containing database accessing system and method (see Abstract), in which he teaches receiving a string of numbers (see figure 9. It is inherent that a telephone keypad is used to enter a string of numbers, and see column 17, line 62 through column 18, line 9); and translating the string of numbers into a plurality of letter strings based on mapping information (see column 10, lines 17-31.)

Therefore, it would have been obvious to a use having ordinary skill in the art at the time the invention was made to have modified Cappi to include receiving a string of numbers; and translating the string of numbers into a plurality of letter strings based on mapping information.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cappi by the teaching of Gilai et al, because receiving a string of numbers; and translating the string of numbers into a plurality of letter strings based on mapping information , would enable the user to enter the desired input, whether alphabetic or numeric, through a “reduced” numeric keypad, such as a standard telephone keypad, as taught by Gilai et al (see column 6, lines 52-60, also see figures 9 and 13.)

As to claim 24, the applicant is directed to the remarks and discussions made in claim 21 above, where “receiving a number word” is read on Gilai et al’s teaching of “receiving a string of numbers”.

As to claim 26, the applicant is directed to the remarks and discussions made in claims 1, 16, 21, and 24 above.

As to claim 29, Cappi teaches a method of providing search results (see Abstract) in response to an ambiguous search query (see paragraph 48) received from a client device (see paragraphs 9 and 36):

receiving at a server device information components from a client device (see paragraph 36.)

For the remaining steps of this claim, the applicant is directed to the remarks and discussions made in claims 1, 16, 21, and 24 above.

As to claim 30, Cappi teaches a computer-readable medium (see figure 1) containing one or more instructions (see paragraphs 34 and 38) for providing search results (see Abstract) in response to an ambiguous search query, the ambiguous search query (see paragraph 48.)

For the remaining steps of this claim, the applicant is directed to the remarks and discussions made in claims 1, 16, 21, and 24 above.

As to claims 31 and 32, Cappi teaches an apparatus for providing search results in response to an ambiguous search query (see paragraph 48.)

For the remaining steps of this claim, the applicant is directed to the remarks and discussions made in claims 1, 16, 21, and 24 above.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of art with respect to methods and systems of searching with ambiguous search queries in general:

Patent/Pub. No.	Issued to	Cited for teaching
US 2002/0021311	Shechter et al.	Data entry using a reduced keypad.
US 2002/0059069	Hsu et al.	Natural language search and query interface.

6. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (703) 305-3830.

tm

December 5, 2003



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